

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 5, 6, 7 and 8 as follows and add claim 9.

1. (Currently Amended) A vehicle control system comprising a plurality of control devices, each comprising a computer, which form a plurality of subsystems connected to respective controlled objects and a cooperative control device, comprising a computer, which cooperatively operates said plurality of control devices through a communication line, wherein

each of said plurality of control devices comprises an input/output computer control device for conducting input and output processing for the signals sent and received between said cooperative control device and said controlled objects; and

said cooperative control device comprises a control calculation device for calculating control signals which control operation of said plurality of computer control devices and said controlled objects based on the received signals that have been received from said plurality of computer control devices.

2. (ORIGINAL) A vehicle control system according to claim 1 wherein

B) said control calculation device of said cooperative control device calculates controlled physical values to be attained by operations of said plurality of control devices and said controlled objects as control signals which control the operation of said plurality of control devices and said controlled objects; and

said input/output control devices of said control system convert said controlled physical values which have been received from said cooperative control device to operation command values that indicate directly the operation of said control devices and said controlled objects.

3. (Previously Presented) A vehicle control system according to claim 1, wherein

said plurality of control devices provides an autonomous control device which controls the operations of said controlled objects independently from said cooperative control device during the occurrence of an abnormality between said communication systems and said cooperative control devices or said cooperative control device.

4. (Previously Presented) A vehicle control system comprising a plurality of control devices which form a plurality of subsystems connected to respective controlled objects and a cooperative control device which cooperatively operates said plurality of control devices through a communication line, wherein the vehicle control system further comprises:

a priority assigning device which assigns a priority to data sent and received via said communication line;

a plurality of FIFO storage devices which temporarily store said data after being classified depending on said priority; and

a data sending device which sends said data according to its priority from said FIFO storage device which stores said data having a high priority.

5. (Currently Amended) A vehicle control system according to claim 4, wherein, said data sending device which sends data according to its priority stops transmission of said data being sent when the data with ~~an priority~~ a priority that is higher than said data being sent is stored in said FIFO storage device and sends said data having the higher priority.

6. (Currently Amended) A vehicle control system according to claim 4, further comprises, a packet generating device that generates packets as said data and a message generating device that partitions said packets into messages depending on ~~the communication protocol~~ a communication protocol; wherein

said priority assigning device assigns said priority depending on the length of said packet;

said plurality of FIFO storage devices classify and temporarily store said message depending on said priority of said packets; and

said data transmission device sends said message according to the priority from said FIFO storage device that stores said packets assigned said high priority.

7. (Currently Amended) A vehicle control system comprising_:

_____a plurality of control devices which forms a plurality of subsystems connected to respective controlled objects, and

_____a cooperative control device which cooperatively operates said plurality of control devices through a communication line, ~~wherein the vehicle control system further comprises:~~

wherein said cooperative control device comprises;

a plurality of different cooperative control side communication ports,

a data sending and receiving device that carries out transmission and receiving of data to and from said plurality of control devices through said cooperative control side communication ports, ~~and~~

a determination device that determines whether or not an abnormality has occurred in the transmission and receiving of said data, ~~wherein data; and wherein;~~

said plurality of control devices each comprise a plurality of communication ports that connect at least two or more ~~among~~ of said plurality of cooperative control side communication ~~ports~~ ports, ~~and wherein; and~~

→ said data sending and receiving device of said cooperative control device, depending on the results of the determination by the determination device, sends and receives ~~different~~ said data to and from each of said plurality of communication ports of said control devices, and in addition, said data sent to and received from said communication ports where said abnormality has occurred is sent to and received from any ~~said~~ communication ports where said abnormality has not occurred.

8. (Currently amended) A vehicle control system comprising:

_____ a plurality of control devices which forms a plurality of subsystems connected to respective controlled objects and a cooperative control device which cooperatively operates said plurality of control devices through a communication line, wherein the vehicle control system further comprises:

a plurality of different cooperative control side communication ports,

a data sending and receiving device that sends and receives data to and from said plurality of control device through said cooperative control side communication port; ~~ports; and~~

a determination device that determines whether or not an abnormality has occurred in the sending or receiving of said data; ~~and~~

a data partitioning devices that generates a plurality of segments of partitioned data by partitioning said data according to the results of the determination by said determination device; ~~device; and~~

said plurality of control devices each comprises a plurality of communication ports that connect at least two or more of said plurality of cooperative control side communication ports, wherein; and furthermore:

said data sending and receiving device of said cooperative control device sends and receives ~~said~~ different data to and from each of said plurality of communication ports of said control device depending on the result of ~~the~~ a determination of said determination apparatus, and in addition, said plurality of partitioned data is sent and received by being distributed over said plurality of communication ports on which no abnormality has occurred.

9. (NEW) A vehicle control system comprising

a plurality of control devices which forms a plurality of subsystems connected to respective controlled objects and a cooperative control device which cooperatively operates said plurality of control devices through a communication line, wherein

each of said plurality of control devices comprises an input/output control device for conducting input and output processing for the signals sent and received between said cooperative control devices and said controlled objects; and

said cooperative control device comprises a control calculation device for calculating control signals which control operations of said plurality of control devices and said controlled objects based on the received signals that have been received from said plurality of control devices, wherein

said plurality of control devices provides an autonomous control device which controls the operations of said controlled objects independently from said cooperative control device during the occurrence of an abnormality between said communication systems and said cooperative control devices or said cooperative control device.

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